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BOARD OF MANAGEMENT.

It was decided to hold no meeting of the Board in August, there being very little pressing business and because of the absence of many of the members. The next meeting will be on September 15th. at 1[illegible].40 a.m.

A JAMAICA SCHOOL GARDEN.

AT our request a few months ago, Mr. S. A. Schleifer (now Instructor for Hanover and Westmoreland), wrote the following practical and interesting article on his School Garden at Brainerd. It has been held over till now owing to lack of space :—

While yet a boy and before the days of the Jamaica School Garden, I often felt that every school should have a good ornamental garden, and twelve years ago when I commenced work at Brainerd, I at once set to work to establish there, aided by my scholars, the garden I had so long ago thought of. This was carried on independent of a government grant until the year 1902, when I applied for recognition and obtained a grant. Year by year ever since that grant has been continued and is regarded as an important auxiliary to my slender income. Teachers who make no effort in this direction deny themselves a great privilege and a delight. In Mr. Williams' book on School Gardens and in a published lecture delivered by Colonel Hicks to the teachers at the agricultural course in 1905, we find all the help and direction given us that can possibly be required. In addition we have from time to time important hints sent us direct from the Schools Office, and these should be carefully studied.

DIFFICULTIES ENCOUNTERED.—Difficulties stand in the way of every good work, and the School Garden is no exception. If, however, we face them boldly we find them very often more imaginary than real. The choosing of a suitable site for our garden is often the first trouble. We would like to have a level portion of land from which to cut out a rectangular plot, but this may not be obtainable. Keep the objects aimed at in the School Garden in view and this difficulty will soon be overcome. The school premises are generally fair representations of the districts in which they exist. Show upon the steep hill-side, the stony soil, the swampy places or the dry patches, what results can be obtained by the application of

scientific methods and thus make the garden a model for the surrounding districts.

At present one square chain will meet the minimum Code requirements, and this brings the possibility of having a garden nearer to every teacher and school, although it must be confessed that this is hardly sufficient to meet the requirements of the enterprising teacher who would like to have all or nearly all his lessons in agriculture illustrated.

In order to obtain an ideal bit of land the mistake may be made of going away far from the schoolroom. The nearer the schoolroom the better it is even though the shape of the garden be irregular and the plan difficult to arrange in consequence. A garden far from the schoolroom loses much of its educational utility. Near at hand every lesson can be illustrated not only to the bigger children but to the smaller ones likewise. Indeed nearly all the science lessons can be given in the very garden itself. My ideal garden is one surrounding the schoolroom. Both children and older people require to be taught how to keep their homes and surroundings not only neat and tidy but profitable, and the garden will afford a good lesson in this respect.

If the garden is far from the schoolroom it will be carried on at much inconvenience during the rainy seasons. There is also much danger in taking tools to and from the garden when the distance is great.

Scholars, and more generally parents, may at first be prejudiced against the work. I remember hearing it said when I first took up a few forks to the garden, that I was going to introduce slavery. All this was, however, soon got over when parents and scholars saw me hard at work myself. I never *drive* but quietly *lead* the children in the work. A teacher who had a School Garden, once told me he would never allow his fingers to touch the ground. It was no wonder to me when I heard a few months after that he had to give up the school. These old fashioned notions must give way with the advancement of intelligence, and the dignity of honest labour must be realised. I do hope that every young teacher in addition to establishing a School Garden will aim at obtaining for himself a few acres of land, developing them and on them make for himself a home. This is the right road to independence. Should parents be angered about their children doing the work, give them a patient hearing, explain to them, but be firm. A father, who is a Chinese shopkeeper, once wrote to me objecting to his children doing manual labour at school, giving as his reason that he did not want them to become cultivators. I explained to him. He refused the explanation and threatened to report the matter to the manager and to the Schools Office. I was not frightened at this and continued firm. Then followed the stopping away of the children from school for about a month, after which they were sent back and are now among the most willing workers in the garden.

Should a scholar appear sulky when sent to work, I simply send him back to the schoolroom to do some studies privately, and you

may be sure he is the first to seek for tools the next day. Such cases, however, are exceedingly rare. There is always a race to get the tools. Difficulties with overbearing managers I cannot deal with, as the managers of this school have always been *gentlemen*.

THE PLAN.—After choosing our site we must set about preparing a plan of the garden we intend making. If the land selected is of a regular shape the making of this is an easy matter. Where the land is irregularly shaped there is some difficulty. My own garden which is more than a quarter acre in extent, is of a very irregular shape and is hilly, but I am making the best of what I could obtain. Have a definite object in view in arranging for every bed, path, or plant. There should be in our minds a complete picture of the whole arrangement before we set to work. Keep before you the lessons you will have to illustrate. Remember that a garden may produce the best of nearly everything planted and yet fail to fulfil all that is required of it as a *School Garden*.

Arrange for wide paths which will divide the garden into sections to illustrate the great truths of scientific agriculture. These paths should never be less than four feet wide, so as to allow for standing room for groups of children. My own gardeu is arranged around the church and school buildings and is at present divided into seven sections. The first section is labelled "Bad Cultivation," and is carelessly planted out and badly cared. Section two is labelled "Good Cultivation," and in this every possible improvement is made, with regular cleaning, forking, trenching and manuring. In this section such plants as banana, plantain, cocoa and coffee, are grown. Section three is a fairly level plot thirty-two by sixteen square yards, and is labelled "Rotation." Here is grown arrowroot, peas, beans, potatoes, yams, cabbages, turnips, etc., in regular rotation. Section four is labelled "Sugar Cane," and is well kept but no manure is used. Section five is labelled "Sugar Cane" also and is manured. Section six labelled "Experiments," is arranged to illustrate the action of manures. This section is divided into seven plots, twelve by eight square feet each, with paths three feet wide between. To *plot one* cow manure is added, to *plot two* no manure is added, to *plot three* a mixture of stable manure and wood ash is added, to *plot four* manure is added in the form of rich soil brought from another place, to *plot five* compost manure as well as a mixture of super-phosphate and potash are added, to *plot six* super-phosphate is added, and to *plot seven* potash is added. These plots, all lying side by side, are sub-divided by three lines running across the entire section, into four small beds each and planted out with rows of cabbages, Irish potatoes, cowpeas, and tomatoes.

Section seven as well as the ornamental borders and patches, supply space for competition. Numbers of children are grouped together and a prize is offered in each group for the best result obtained from similar plots. This proves most interesting and it is pleasant to see how carefully the plants are kept free of weeds, watered and manured.

Besides these sections there are two *compost heaps* and a *nursery*. This, or any similar arrangement, will be found to meet the requirements.

FENCING.—A good fence is indispensable to successful gardening, and the old saying "The cheap coat is the dear coat," applies here. A fence made of bamboo rails or other sticks, will be a source of constant trouble and annoyance. Procure wire at the start and erect a substantial fence. Put in a few stakes that will grow, such as plum, cedar, etc., and if space admits get up a growing border of some ornamental plant, such as crotons or aralia. A well-fenced garden with decent gates will be an object lesson of great value to the surroundings, where very often much loss of crops and consequent disagreeableness with neighbours could be avoided if only attention were given at the proper time to the fencing of the property. Many a law-suit, sometimes costing several pounds, could have been saved by spending a few shillings and putting in a little labour at the proper time.

LABELLING.—In order to make the garden work pleasant, interesting and educative, every section, every bed and every plant in case of perennials, should be labelled. Various cheap articles may be used in labelling, such as wood and bits of slate, but the Handsomest and most lasting is that made from an old zinc sheet. Cut, painted and numbered this makes a handsome, lasting and handy label. These should be nailed on to strong stakes or hung on to the plants by pieces of fine wire. Cords will rot off too quickly and wire can be obtained easily from the necks of empty bottles.

RECORDS.—It will be found convenient to rule up the garden record with columns for date, boys over eleven, girls over eleven, children under eleven, and a very much wider one for remarks. In the column for remarks the kind of work done each day and any observations made by the teacher may be noted. The keeping of accounts must be done separately. The children's note books should be ruled up with columns for date and remarks. Both teacher and scholars will find careful labelling very helpful in the keeping of these records. It would be impossible for anything accurate to be done otherwise. Neatness of arrangement in the note books should be insisted upon, but the children must be given a free hand in the notes they make. A prize should be offered for the best-kept book at the end of the year.

PRIZE MONEY.—It might be asked, where is all this prize-money to come from? My answer is, I see no reason why it should not be drawn from the income accruing from the sale of garden products and then duly entered up as items of expenditure.

THE BEST HOUR.—The best time in the day for the work is a matter to be decided by local conditions. I find that by giving one and a quarter hours for recess time in the middle of the day and taking from that a three-quarter hour for work in the garden, a very convenient arrangement is effected. In the early morning you will

not get the scholars and in the afternoon if some of the scholars are sent home and the others kept to work the teacher may get in conflict with the parents, who would like to have the children home to do something for them. The mid-day hour is hot at times yet it makes no difference to the children, who would be running about in the sun if not working in the garden. Rain will very rarely disturb the work at this hour, whereas it will often be impossible to have a single meeting for the week in the afternoon hour.

KEEPING AND CARING OF TOOLS.—A secure place must be provided for the storing of the tools, and the best care should be taken of them, monitors being appointed to see them thoroughly cleaned after being used, also to distribute, collect and check them as may be necessary. The children must also be taught how to carry the tools with such care as will avoid accidents to themselves and to others.

In conclusion I may state for the encouragement of young teachers, that £68 already received in grants and prizes and an additional sum realised from my portion of garden products is a sum not to have been lightly oversighted, and I hope the day is not far distant when every country school in Jamaica will pride itself in the possession of a School Garden. —SAMUEL A. SCHLEIFER.

[Mr. Williams' book on "School Gardens," referred to in this article, may be procured at the office of this Society at a cost of 1/. The book is a very instructive guide-book for all who go in for a vegetable garden.—ED.]

SUGGESTIONS AS TO CASTILLOA CULTIVATION IN JAMAICA.

BY HON. H. H. COUSINS, M.A., F.C.S., DIRECTOR OF AGRICULTURE.

The original Castilloa Elastica Cervantes.

The name *Castilloa elastica* was first given to the Mexican rubber tree on its scientific description in a Mexican "Gazette of Literature" by Cervantes in 1794. The species referred to was one growing in Mexico, and is apparently, the chief variety grown in that country for purposes of rubber production.

I have reason to believe that there are one hundred acres of this Castilloa which were planted out in St. Thomas-in-the-East from Mexican seed about seven years ago.

Mr. Briscoe was instructed to test the trees and procure material for identification. He reports 4,000 trees with a girth of three feet at three feet from the ground and a height of fifty feet, the trees giving a free flow of liquid latex of a white colour. These trees were growing at an elevation of 1,300 feet. Material has been sent to Professor Pittier for identification of the species.

The Castilloa first introduced into Jamaica.—In 1875 Mr. Robert Cross, an English plant collector, was sent out by Kew to obtain stock of the Castilloa rubber tree.

He reached Panama in May and found the rubber trees on the Isthmus being destroyed wholesale by native collectors, who felled the trees so as to get rubber more easily. He ascended the Chagres river in a canoe, found the Castilloas growing along the edge of the streams with their roots running down to the edge of the water. They were growing everywhere except in swampy ground. Some of the trees he reported "to be 160 to 180 feet in height, with a diameter of five feet and a yield of one hundred pounds of rubber." The trees flourished best in the excessively damp forest ranges. Mr. Cross drew some latex and the rubber was reported upon in London as having much less impurity than was usual for Castilloa rubber.

He collected six hundred plants and left the Isthmus in September. The vessel was wrecked on the Pedro Cay off Jamaica, and all left the ship but Mr. Cross, who refused to desert his plants. Eventually he was rescued by *H.M.S. Dryad*, and reached Kingston, whence he sailed in the *R.M.S. Nile*, arriving at Southampton in October.

One hundred and thirty-four of Mr. Cross' plants were successfully grown at Kew and they were propagated by cuttings in 1876 and supplies of rooted cuttings were sent to India and various British colonies. The Castilloa plants sent to Jamaica, however, never grew, and in February, 1881, the Director of Public Gardens (Mr. D. Morris) reported that Castilloa had not been successfully introduced into the Colony. The Royal Gardens at Kew continued to propagate their stock of Castilloa and in October, 1881, Mr. W. Harris, on taking up his appointment in Jamaica, brought out some plants in a Wardian case. The oldest tree now growing at Castleton was one of the plants thus brought by Mr. Harris. Seed from this tree was used for propagating and it is fairly certain that all trees of over fifteen years' growth in Jamaica are the progeny of this original Castleton tree. Subsequently the Department received seed from British Honduras from which plants were raised and distributed.

The recent identification by Professor Pittier of both the original Castleton tree and the young ones (seven years old) at Hope as *Castilloa Guatemalteca*, the variety generally grown in Guatemala and British Honduras, is of interest, in view of the fact that this species is distinct from the one known as *Panamensis*, which was naturally presumed to be the original source of Mr. Cross' first introduction in 1875.

Castilloa in Costa Rica.—The variety growing on the Atlantic side of Costa Rica is now recognised to be different from the true Castilloa elastica as well as the Panama and Guatemala species just referred to, and it has been named *Castilloa costaricana.*

The varieties described to be different by Count Koschny as White, Black and Red Bark, are found to be identical and the dif-

ferences not to be specific. On the Pacific side of Costa Rica there is an olive green-flowered species of Castilloa of a drought-resistent type of which the Department hopes to get seed shortly for trial. Professor Pittier has suggested that this should be suitable for some parts of Jamaica.

Mr. Briscoe has just discovered a plantation of Castilloa from Costa Rican seed in St. Thomas, seven years old. The trees have grown well. On tapping, the latex did not flow freely but coagulated in the cuts. Specimens are being sent to Professor Pittier for identification. Mr. Briscoe reports that the trees are thirty to thirty-five feet high, with a girth of three feet. By a fortunate chance we now have established trees of Castilloa from Mexico, Honduras, Costa Rica and Panama, ready for testing in Jamaica, and the Department will shortly have some valuable data as to rubber yields from the Castilloas from these four sources.

Selection of Castilloa varieties for planting in Jamaica.—The first fallacy that requires to be exposed is that of regarding the rubber yield of a Castilloa tree as a special property or specific attribute of the species.

It is quite possible for a Castilloa to grow into a large forest tree and to yield enormous quantities of latex of good quality under favourable conditions of intense humidity, protection from wind, rich soil and conditions favouring the rankest vegetation, while the same tree if planted in a region of dry atmosphere with frequent droughts and a sun-burnt soil, might develop into a poor, weakly tree, with a very inferior flow of latex.

Speaking generally, it may be accepted as an axiom in rubber production, that the nearer to the Equator and the more uniform the heat and moisture, the greater the prospects for a good yield of rubber from such trees as Hevea and Castilloa. Jamaica is on the extreme limit of this rubber zone, while Cuba is undoubtedly beyond it.

It is therefore quite wrong to assume that a Castilloa tree grown under the steamy forest conditions of the Atlantic seaboard of Costa Rica in latitude ten degrees North, can be expected to exert any specific powers of rubber production in Jamaica in latitude eighteen degrees North, in defiance of the great differences in climate thus involved.

It would be only natural to expect that the *Castilloa Costaricana* would fail to find a congenial home in conditions so much less favourable to its growth and that the variety now being grown in the Island *C. guatemalteca*, which flourishes on the mainland at the same degree of latitude as in Jamaica, is the more likely variety of the two to succeed in this Island.

These considerations should be carefully weighed by planters before deciding to invest at all largely in plantations of Castilloa from Costa Rican seed.

Castilloa as a shade for Cocoa.—Several years ago the culture of Castilloa received a considerable impetus from the recom-

mendation of Dr. Daniel Morris, now Imperial Commissioner for the British West Indies, that Castilloa be grown as shade for coffee and cocoa in British Honduras with an estimated return of $125 per acre.

According to Dr. Carl Sapper, a German scientist very familiar with Central America, this advice has been followed with disastrous results. He says :—

"In fact, the developments thus far in the field of Castilloa culture show on the average very little in the way of favourable results. Particularly does it seem to have failed completely when it has been combined with other cultures in order to lessen the expenses of opening rubber plantations. Thus, on the advice of the well-known English Botanist, D. Morris (then in Jamaica), rubber trees were planted for shade in the coffee-plantation San Felipe, near El Cayo, in British Honduras, and the result was that these shade trees ruined the coffee, but did not on the other hand themselves develop normally because they were planted too close. In other places where rubber trees were used as shade for cocoa plantations, the planters tell me that the Castilloa trees impair the growth of the cacao and do further damage from the falling of the leaves, so that they would much prefer to be rid of these shade trees if that were practicable."—*The Culture of the Central American Rubber Tree. By O. F. Cook, 1903.*

In the last issue of the *Journal d'Agriculture Tropicale*, Mr. J. H. Hart, late Superintendent of Gardens in Trinidad and a recognised authority on cocoa, writes :—

"I have always been opposed to the idea of using Castilloa as shade for cocoa. The examples of this combined culture which I have examined in Colombia and several States of Central America, *have long convinced me that the two cultures were incompatible.*

"Sir Daniel Morris has urged the suitability of Castilloa as a shade for cocoa. In Tobago, an island under the governmental control of Trinidad, the results recorded after ten or twelve years of experience, almost invariably go to contradict this opinion. It is possible to be favourably impressed at the start but as is well said in the old adage "Time will prove," and it is the factor *time* that can alone settle this question of shade. From this point of view one can state that the trials of shading cocoa with Castilloa indicate a dsadvantage to the latter while at the same time resulting in reduced vigour and growth of the cocoa to be protected."

Experience is accumulating that it is not sound practice to plant Castilloa as a shade for cocoa and planters should be warned that they will probably be disappointed if such a combination be attempted in Jamaica.

Castilloa should be planted by itself if the best results are desired.—H. H. COUSINS, Director of Agriculture.

PORTO RICO CATTLE.

By D. W. May in the Porto Rico Horticultural News.

Porto Rico is famous throughout the West Indies for the excellence of her cattle. At the time of the American occupation a great many were exported to the other islands, especially Cuba, where they were used partly for beef but mainly for work animals in the cane fields. These cattle are hardy and while slow in maturing are very heavy. They are wholly grass fed and can live on scanty and coarse herbage. Up until fifty years ago there were no other cattle imported, the race consisting of the descendants of the old Spanish cattle brought in the early days. Fifty years ago Sir Juan B. Prats of Ponce, imported some humped cattle from Africa. These belonged to the Zebu class and are characterised by the hump on the shoulders and large drooping ears. The cross between these cattle and the old Porto Rican cattle is called "mestiza." The Zebu blood is still noticeable in a great many animals, they having a hump in the shoulders and drooping ears.

Since the American occupation the exportation of cattle has ceased owing to the great revival in the sugar industry where most of them are employed as work animals. The island does not produce enough cattle for home consumption at present and refrigerated beef from the States is shipped down to supply the deficiency. Importations from Venezuela have been stopped because of our strict quarantine laws. One large shipment of cattle has been made from Florida, but it was found unprofitable and none followed. These animals were inferior to the Porto Rican cattle. In fact, the cattle of Porto Rico are far superior to the so-called native cattle of the Southern States, not only in size but in endurance and ability to thrive upon scanty pastures. I am of the opinion that in sections of the South where raising of cattle is very difficult owing to poor grass and many ticks, that Porto Rican cattle could be imported to advantage for breeding purposes.

During the last few years a number of pure-bred cattle from the States have been brought into Porto Rico. The experiment station has had over fifty head for various persons. Up to the present time these importations cannot be said to be successful. The animals cannot thrive upon the coarse native grasses like our Porto Rican cattle, while the ticks hide in their long hair and soon reduce them to mere skeletons when they are allowed to graze upon the fields. Long haired cattle from the States in the same field will be covered with ticks, while Porto Rican cattle will have only a very few. The hair of the Porto Rican cattle is quite short and it is impossible for the ticks to hide themselves when attached. We have a black bird that follows the cattle about and picks the ticks off them. I have seen them grasping the tail with both feet and feeding upon the ticks infesting the hind quarters of the animal. They will also stand on the ground beneath the animal and jump up pick-

ing ticks, getting one at each hop. To this bird is largely due the fact that in our fields ticks are not so plentiful as in the Southern States. It is often stated that ticks will not fasten upon Zebu cattle, but this is a mistake although they are seldom found in any number. Whether this is due to the reason that ticks do not like Zebu blood or to the extremely short hair of these animals, I am unable to say. The Zebu cross is considered an improvement on native cattle.

I lately shipped to Jamaica three Porto Rican bulls for crossing with the cattle of that Island, which have a much larger infusion of Zebu blood than ours.

Doubtless tick fever exists in Porto Rico, but of the fifty head of cattle brought from the States and which were at the Station, only three had been inoculated. No losses occurred from tick fever although the cattle were infested from the start with ticks. Either the disease is in a much milder form than in the Southern States or else there is some virtue in the Malojillo grass which forms the main feed. This is a joint grass which grows in the low lands and is much relished by animals. It keeps them in good condition and must have great virtue as it is the principal feed of not only the work cattle but of our horses, which are capable of great endurance. The few cross-bred calves between improved breeds of the North and Porto Rican cattle are promising, but the cattle that are imported soon, as a rule, become emaciated, and any person who brings down a herd may expect to have losses from one cause or another and to see his imported cattle degenerate. The Porto Rican ranchers do not believe in pure-bred cattle from the North, nor have we been able to produce sufficient evidence yet to justify a change in their opinion. Profitable results may be gained by importing a pure-bred sire, keeping him stabled, well-fed and cleaned of ticks, but the importation of a herd of pure-bred cattle from the North is almost sure to prove a failure if they come from over the Quarantine line and have not become immune to tick fever.

THE PEASANTRY AND BEASTS OF BURDEN.

THE Society for the Protection of Animals in Jamaica, has done a great deal since its inauguration to ameliorate the condition of the dumb animals. One way has been by means of articles dealing with the treatment of animals. Pamphlets showing the well-cared and the badly-cared donkey did much to bring home to the peasant the advantage of properly attending to his friend. Prizes have been offered through Shows for the dog, and mule, and donkey belonging to small settlers, that show signs of being well cared for. This gives the settler a chance. He may not be able to show a high-stepping animal but he has a chance of exhibiting an animal on which regular care has been bestowed. There was a time when prizes were offered for "the best mule whip." These are not offered now. It has come to be recognised that the best whip is a

good feed of corn and a well-groomed coat. There is no doubt that it pays to attend to the cleaning and feeding of the beast of burden. Some of these animals have long journeys to make in going to and from market. It does not pay the owner to take a small load, which is all an under-fed animal is able to carry. It does not pay to overload a weak animal, for the risk of a breakdown on the road is too great. Thus the best thing is to feed the animal properly and regularly. Some owners seem to think that to feed the donkey or mule well the day before it takes the long journey is sufficient. This is a mistake. The animal that is fed carefully and regularly is the one that gives the most work. The beast of burden is the peasant's best friend and yet many of them are badly treated.

The Hanover Society at its meeting in May (July JOURNAL) drew attention to the cruel custom of hitting mules over the head with the whip handle, over-loading the carts with people on the return journey, and of using long traces to the out-riggers. Every means should be adopted to put a stop to these practices. We have heard a driver addressing his animal as "an ignorant mule," but the charge of ignorance might with more justice be laid against the driver. But the driver who hits his animal over the head with a big stick is more than ignorant—he is cruel. The custom of carrying people back from market has arisen out of so many people hiring a cart. Each has so many beast-loads in the cart and each person is entitled to a ride back. This is an additional cruelty to the mules. They carry up a full load of say yams, twenty-five or thirty miles on the Friday night to the market. On the Saturday afternoon the people come back. Each one claims a ride. As a rule, the driver sets his mules galloping, and mile after mile is covered in this way. Steps should be taken to curtail the carrying of so many. The long trace is a source of danger. Indeed the system of one shaft mule on a hilly road is a piece of cruelty. We have seen carts built with three shafts ; this makes provision for two shaft-mules, and by this arrangement the weight going down hill especially is divided.

It takes a long time to overturn old customs, but the S.P.A.J. should be encouraged in its work by all those who know how important it is to have animals well cared. Signs of improvement are showing themselves. Members of the Society and others interested are able to accomplish much if they speak to drivers and encourage them to be kind to their beasts of burden. And when anyone or any constable sees a case of cruelty, he should report it. In this way much good of a permanent kind may be done.—J. F. GARTSHORE.

NUT COOKIES.—Cream one scant tablespoon of butter with one-half cup of sugar. Add two eggs, one scant cup of flour, one teaspoonful of baking powder, one-half teaspoon of salt, four tablespoons of milk, a generous cup of grated coconut and vanilla to flavour. Drop with a teaspoon on buttered pans about two inches apart. If too thick, add a little milk.

DENMARK'S OBJECT-LESSON IN AGRICULTURAL CO-OPERATION.

DENMARK is a farmer State. "It has a farmer Parliament, a farmer Ministry, a farmer point of view. Its legislation is that of the farmer, too. In Denmark the people really rule. The Danish peasant is the direct antithesis of the English peasant who wants to be ruled by a lord. The State of Denmark, in short, is a peasant democracy. Its ruling class is the small farmer possessing from forty to sixty acres of land, and with an outlook on life that is exclusively agricultural." How entirely successful these peasant farmers of Denmark have been is set forth in a most illuminating article by Frederic C. Howe in the *Outlook* of New York. The facts which he gives constitute an object-lesson to our own country in thrift and co-operation: —

"The land," says Mr. Howe, "is far from rich, the climate is not of the best, and the winters are very long. But the Danish peasant owns his land. Denmark is a country of peasant proprietors. This is the economic framework of his civilisation. The Danish peasant is his own landlord, and he has made use of the Government to promote the acquisition of land by the people.

About 1850 credit societies were organised which supplied capital to the peasants with which to buy land. These societies took long-time mortgages, running from fifty to one hundred years. Under these contracts the peasants pay off both the principal and the interest in instalments. In 1899 and in 1904 the State stimulated this movement still further by laws that enabled the small peasants to borrow money from the State Treasury with which to buy a holding. The value of the land is limited to about £300, and the size of the estate so purchased ranges from eight to twelve acres. Only one-tenth of the purchase money need be found by the purchaser. The State advances the other nine-tenths and charges the peasant four per cent., one per cent. of which is to repay the loan. The effect of the law was to increase the value of the land of the large estate owners, just as has the Small Holdings Act in Great Britain. But the general effect of the legislation and of the mutual credit societies has been to check the movement of the people away from the land. Denmark is almost the only country where this is true.

There is very little tenancy in Denmark. Over eighty-nine per cent. of the farmers own their farms. They work their own holdings. Only about eleven per cent. are tenants. In America the percentage of farm ownership is very much less. And ownership in Denmark is widely distributed. The total number of farms is 250,000, with a cultivated area of over ten million acres. The very large farms are survivals of the old feudal estates. They comprise about one-tenth of the total agricultural area.

There are three things which make Denmark unique: The first is the system of peasant ownership; the second is the co-operative

movement, which is well-nigh universal ; and the third is the political supremacy of the peasant class. The second and third causes are, however, due to the first. For home ownership lies at the root of the Dane's success.

The Dane is the best farmer in the world. The secret of his success is intensive cultivation. The land is minutely divided, the average size of the farms, which comprise nine-tenths of the land, being thirty-nine acres. About a hundred thousand peasants with larger farms ranging from thirteen and one-half to one hundred and fifty acres, who own about seven-tenths of the land, live very much better than the farmers just mentioned. They work their farms partly with hired labour, are well educated, and devote a lot of time to politics and the co-operative undertakings with which they are connected. They are the ruling class in the State, and are as wise as the traditional Jew and are as canny as the Scot. They control the politics of their district and are ascendant in Parliament as well. They know all about the most technical agriculture, are familiar with prices current, are rather skilled mechanics and good chemists. They are saturated with a knowledge of agriculture, and are not consumed with the ambition to be rich or to acquire more land. Their only ambition is to be good farmers.

The Dane has made his land a dairy farm. Denmark is cultivated like a market garden. The chief products are butter, eggs, bacon, poultry, and fine stock. A generation ago, like the farmers of England, the Dane was threatened with extinction by the wheat-fields of America, Russia, and the Argentine Republic. But the Danish peasant is self-reliant, and he is a convinced Free Trader. He looked about for other markets. He found that England was buying her butter, eggs, and bacon from Ireland. He sent a commission to that country to ascertain how Ireland produced these things. Then Parliament and the people set to work to convert Denmark into a market garden. That was only a quarter of a century ago. Soon the Danes were producing better bacon, better butter, better eggs, than the Irish. Within the last few years no less than four special commissions have been to Denmark from Ireland and Scotland to find out how it is done. For the Danes have captured the English market. And they have done it by improving upon Irish methods.

Denmark is now exporting to Germany, to England, to South America, and even to the Philippines.

Most of the horses and cattle go to Germany. The bulk of the balance of the exports go to England. The total export trade is approximately £75 for every farm, of which 133,000 of the 250,000 are of less than thirteen and one-half acres in extent and have an average size of but 3.6 acres, the average of all of the farms being but forty-three acres for the entire country.

The Danish farmer is an expert. He is also a student. He has studied the breed of horses until he knows what can be raised to the

best advantage, and what the German most wants. The same is true of cattle, hogs and chickens. He knows to a nicety just how a cow should be fed to produce the best butter. He knows how to breed the best hogs. He makes his butter and produces his eggs of a uniform quality. He packs them so that they will please. And he is aided in countless ways by the State. The State is always at his service.

The other great factor is co-operation. The Danish farmer gets all that he produces—absolutely all. The State owns the railways and protects the farmer from exploitation. And he himself performs all of the processes of production, distribution, and exchange. The co-operative movement began with dairying. Up to about 1880 each farmer made his own butter. It was very costly, and there was no uniformity in the product. About this time a new device was invented for butter-making. A number of farmers got together and purchased one of the machines. Its success was immediate. Other villages followed. To-day there are 1,087 co-operative dairies, with a membership of 158,000 farmers. There are also 200 other private dairies. Nearly ninety-five per cent. of the farmers are members of the co-operative dairies, which ship nearly £200,000 worth of butter a week to England.

The Danish Co-operative Egg Export Society was the next organisation. It was organised in 1895. It now has 57,000 members. The eggs are collected and stamped each day in a local circle. Then they are sent to larger circles for export. In 1908 the export egg business amounted to £1,320,000. Danish eggs bring fancy prices, for they are always fresh and carefully graded.

The peasant is also his own banker. There are 536 co-operative savings banks in the country. Here he goes when he wants a loan. The deposits in 1906 amounted to £41,700,000, and the number of depositors to 1,352,000 (over half of the population), with an average deposit of £31. But the co-operative story does not end here. The farmer does his own buying at wholesale. Through these purchasing societies he buys food for his cattle. Almost everything that he consumes comes to him at cost. It is purchased by central agencies made up from representatives of local agencies. The goods are then distributed to the stores, one of which is to be found in every village. Thus he gets his agricultural implements. Thus he buys his food and all his supplies. He saves the profit of the jobber and the retail dealer for himself. The turnover of the purchasing societies in 1907 was £2,500,000.

What is the lesson of it all? In the first place it demonstrates the controlling influence of a system of landowership on the life of a people. Denmark is democratic, enlightened, and self-governed because the great bulk of the people have an interest in the soil. France, Holland, and Switzerland prove the same thing. It shows, too, that poverty can be reduced to a minimum and the well-being of all the people promoted by State and co-operation. Even wages in the city are determined by the agricultural situation. The ease

with which men live on the farm and acquire holdings of their own compels the employer to compete with the land for his labour. The land question thus lies at the root of the wages question.

Further than this, the Danish farmer appreciates that he is a consumer as well as a producer. He has learned that his success in agriculture is the result of his own efforts. He is not afflicted by trusts or monopolies. There is sufficient competition in the world which seeks him out to enable him to pick and choose, and he is able to get the best that the world offers and at his own price.

The little State of Denmark shows that the old philosophy of individualism has broken down, and that there are many activities which the State itself must assume in order to protect the people and promote their common welfare."

NOTES FROM MY APIARY.

THE honey season, which looked so promising here a month or two ago, has come to an abrupt conclusion owing to the entire failure of the dogwood bloom. This, along with the failure of the logwood flow in January, has made it rather a poor year for bees. Robbing is now the order of the day and happy is the apiarist who has all nuclei built up and no queenless colonies on hand. All such colonies should be united to a colony (or nucleus) that has a laying queen as, owing to the cessation of nectar and the prevalence of robbers, no more queens can be reared.

He is a lucky bee-keeper who is located where his bees can get a fall honey flow, as during such a flow is a good time to rear queens for re-queening all colonies that did not come up to the mark during the season. It is often impossible to get this work done during the regular honey flow when the supers are heavy with honey and one is busy with extracting, swarming, etc.

If only a small number of queen cells are wanted, perhaps the simplest plan of rearing them is to make a strong colony queenless and broodless (be sure that it is a *strong* colony) and then give them a comb containing eggs and young larvae from your best queen.

Where a larger number of cells are required one of the many queen-rearing plans given in the text books should be adopted.

It is understood of course, that queen-rearing should not be undertaken unless the bees are gathering some nectar—enough for them to secrete wax and build comb.

Most bee-keepers, I think, use only seven combs in the eight-frame supers, and eight in the ten-frame, thus getting more wax from the thicker combs which are easier to uncap. It is a good plan when all extracting is over for the season to put the full number of combs in each super—using combs from other supers—thus reducing the number of supers for the bees to care for during the fall of the year when they are generally reduced in numbers. I must confess that I never thought of doing this until I had my attention called

to it this season and thinking that there may be others to whom it has not occurred I pass on the hint.

I wonder how many bee-keepers take the trouble to keep a record of each of his colonies! Only by doing this can we find out at the end of each season which colonies have done the best work and those that will need re-queening. A glance at the record should show us too the age of and strain of each queen. Of all methods of record keeping, I have found a book with numbered pages—each colony being numbered to correspond—the most convenient. To avoid the trouble of putting a number on each colony—which number has to be removable—I have recently adopted the following plan—taken from *Gleanings in Bee Culture*—which I find very satisfactory:—Have the apiary laid out in rows of nine colonies in each row and, beginning at one end, number each row from No. 1 upwards. To find out the number of any colony note the number at end of row and counting from the same end, the number of the colony in row. Now by placing the number of the row before that of the colony, we have the colony's number. Supposing the number of row is four and the colony is number six in row, that will give us number 46. The first colony in row two will be number twenty-one and so on. There will be no colonies numbered twenty, thirty, forty, etc., nor from one to ten, but this does not matter as those numbers can be omitted from the book. The plan looks complicated on paper but it is not so in practice, and when moving colonies, changing hives, etc., there is no need to worry about the numbers as they are always there. Unfortunately the plan can not be used when the apiary is not regularly laid out to suit it.—R. C. H.

Falmouth, 16th July, 1910.

COCOA CULTIVATION.

Decaying Cocoa Pods.

We know that there is every prospect of a bumper cocoa crop in the autumn, and cocoa growers would be well advised to make every effort to remove all old cocoa pods, dead sticks, etc., from their cocoa trees and their plantations. The practice of taking off rat-eaten or diseased cocoa pods and leaving them on the ground, cannot be too strongly condemned, as when lying on the ground, they are almost as liable to spread disease through the future crops as when left on the trees. It is only when either buried under the soil or burnt, that it can be guaranteed that the seeds of disease will not blow from them on to the live pods and destroy them. There is no doubt the burning is the safest method, but it is a pity to destroy so valuable a source of manure as the old dead cocoa pods are when buried in the ground. At the same time it is almost criminal to leave them hanging or lying about where they will be sure to infect the next crop with disease, especially when we have a chance of getting such a beautiful crop as we appear to have this year, and

further when that beautiful crop will be an autumn crop, as the disease spreads much faster during the damp, cool weather experienced with an autumn crop, than it does with the warmer, dryer, weather through which a spring crop has to grow.

If cocoa growers would only learn to keep the walks thoroughly clean, even if they did not entirely get rid of the diseases, they would soon reduce the loss under this head to a very small proportion. Many a plantation to-day which is taking no trouble to prevent pod rot is losing from a quarter to half of each crop and yet is spending money on making new plantations.—W. CRADWICK.

Highgate.

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WOODPECKERS AND COCOA.

AT the June meeting of the Avocat (Portland) Branch of the Agricultural Society, a letter *re* Woodpeckers and cocoa, was submitted from the Secretary of the Fair Prospect Branch. The members, generally, stated that woodpeckers were scarcely noticeable in the vicinity except in the woodlands where they exist more or less abundantly; but no reports had been heard in the district of woodpeckers destroying cocoa pods as stated in the circular sent them. The Secretary was requested to inform Mr. Buckley accordingly.

THE GERMAN OIL MARKET.

WE have received from His Excellency the Governor the following extract from a *Consular Trade Report* on the German oil market :—

The prices for oils and greases in Germany are high, but not yet as high as in American markets, since consignments that were made to Germany from the United States some time ago have been returned. The markets in Germany are at the date of writing very bare of stocks.

With the cotton-seed crop, the Rufisque peanut crop, and the sunflower-seed crop all badly short, there is a big deficiency to be made up in the edible oil markets of the world. The olive crop is a large one, but the price of the oil puts it beyond consideration as a substitute for the other oils mentioned. However, when there is a full supply of olive oil less of the other oils are needed, especially in the Mediterranean countries, where much of our cotton-seed oil went last year to supply the big deficiency in olive oil. Conditions have just reversed themselves this season, and it is now the olive oil substitutes which are badly short. This signifies that comparatively high prices for olive oil will probably be maintained, and this feature carries with it continued high prices for oils which are usually used as substitutes for olive oil.

The prices of the two classes of oils (olive and vegetable seed) this season will probably get closer together than for some seasons

past, that of the olive oil declining somewhat, and that of the vegetable oils moving up. There seems to be no feature of the oil market from the European side that can suggest a weakness, unless it is that later the high prices may seriously curtail the consumption of the usually edible grades of oil, and lower grades of olive oil, peanut oil, soya oil, etc., will be pressed into use for human consumption. To this limit it seems the edible oil markets will gradually move.

A butter and cooking grease made from coconut oil is now enjoying a big demand in Germany. It can be bought cheaper than margarine, lard, or lard compound, and seems to be gaining in popularity right along.

The following were the prices early in December, 1909, in Hamburg, duty paid, for the oils named :—

Kinds of Oils.	Price per Pound.
	cents.
American Cotton-seed Oil, P.S.Y.	8.40
German Cotton-seed Oil, P.S.Y.	7.90
English Cotton-seed Oil, P.S.Y.	7.50
Peanut Oil (spot) Rufisque	10.36
Peanut Oil (spot) Gambia	9.70
Peanut Oil (new crop) Rufisque	9.00
Peanut Oil (new crop) Gambia	8.00
Coconut Oil	9.80
Palmnut Oil	9.20
Rape-seed Oil	6.00
Sesame Oil	9.27

PRAEDIAL LARCENY LAW.

THE following Rules have been approved by His Excellency the Governor, for the payment of "Authorised Persons" for attending Court as witnesses, and for performing actual duty :—

(1) Every "Authorised Person," appointed under the Praedial Larceny Law (Law 4 of 1909), shall be paid for attending Court as a witness according to the rule set out in Schedule A of Law 9 of 1899, as amended by Law 4 of 1902 ; but in no case shall he be paid less than 2/- per diem, and mileage at the rate of 3d. per mile one way only.

(2) Every such person shall be paid at the rate of 2/- per diem (and not more, and without mileage for each day on which :—

(a) he effects an arrest, or actually attempts to effect an arrest ;

(b) he attends at a Police Station, or before a Magistrate, on duty in connection with a case, under the said law ;

(c) does such other service in connection with his duties under the law, as has occupied him a substantial part of a day, or other-

wise entitles him to payment in the opinion of the officer authorised to pay him.

(3) All payments shall be made by the Clerks of the Courts at the Court House when the case is tried, or at the Courts Office, if the case does not come to trial.

POULTRY NOTES.

POULTRY INDUSTRY IN BELGIUM.—Belgium is a densely populated country with a large home demand for food, so that, as is the case in the greater part of England and Wales, the producing districts are near to the consuming population, thus affording facilities for sale without transit over long distances. Belgium, however, differs from England in being practically self-supporting as regards eggs and poultry, and Mr. Brown, an eminent English authority on poultry, observes that as an example of what can be accomplished on small farms, Belgium, with her numerous and prosperous people, affords every hope that the increase of small holdings in Britain will enormously advance the relative food production of the country.

The various methods of poultry breeding and keeping adopted in Belgium, the breeds, the methods of marketing, etc., are described in detail, and without attempting to summarise the report as regards these points, reference may be made to one or two subjects of special interest.

Improved Fertility.—Mr. Brown draws special attention to the improved fertility of the land owing to the keeping of poultry. The most noticeable instance of this is met with in what is known as the Campine district, which at one time was an arid sandy plain, covered with fir-trees and incapable of cultivation. About thirty years ago poultry-keeping was taken up by the peasants in this district on a somewhat extensive scale, and by the careful utilisation of the manure produced, much of the land has been so enriched that it has been brought into use for market gardening. Signs of prosperity, it is stated, are evident on all sides, both in the appearance of the people and their dwellings. The villages have grown considerably, and Mr. Brown observes that he has not met with "a more striking instance of the place occupied by poultry in respect to increasing the fertility of the soil and advancing the prosperity of the rural population."

* * *

GAPES: THE SUMMER SCOURGE OF CHICKENS.—When we talk about the parasites that affect poultry we generally mean, or are understood to mean, the insects that are to be found amongst their feathers, and which, as is well known, do a great deal of harm by sapping the life-blood, especially from young stock. There is, however, another parasite which works internally and has a quick and fatal effect upon its victim, and that is the parasite which is known

as the gape worm. This creature becomes lodged in the windpipe and causes death by suffocation. How it gets there is not altogether determined with certainty, for scientists are not by any means agreed as to the way chickens become infected.

The pest generally makes its appearance with the summer weather, and is well known to appear year after year in the same locality. It has been said that it thrives better on low-lying ground and in marshy districts; but as far as one can judge there is no satisfactory evidence to support this conclusion. It is, however, certain that it appears year after year on ground where it has once been known to exist, but that it can be prevented by the soil in that particular spot being treated with lime. This shows how necessary it is that where there has once been an outbreak of gapes the land should be well limed, and no attempt should be made during the next year at all events to raise any more young stock on that particular piece of land.

Curiously enough the parasite does not appear to affect full-grown birds, it only affects chickens, though the effect of having two or three, if not more, of these creatures in the windpipe is so serious that the chicken dies in a few hours.

The symptoms of this trouble are, as the name implies, gaping of the mouth—the birds seem unable to get their breath, and stretch out their necks and sneeze in vain attempts to eject their unwelcome visitors. A distinction must be drawn between gaping, which is due to the presence of gape worms, and the other form of gaping which is caused by birds having lung trouble. Whenever a bird has anything the matter with its breathing tubes it will gape, and this has caused many people to mistake the real disease of gapes, and treatment has been used accordingly which has had no effect.

It must be noted that lung and bronchial troubles do not generally occur in the summer, except such as diphtheritic roup; on the other hand, gapes proper does not occur in winter, so that if a chicken is gaping in the winter time the probability is that it is suffering from some form of lung or bronchial trouble, whereas if the gaping occurs during the summer it points to the presence of gape worms.

The way to treat a case of gapes is to get a feather, the end of which has been dipped in eucalyptus oil or terebene or turpentine, or even common paraffin, insert this gently into the windpipe through the glottis (the slit that is seen at the back of the mouth opening and shutting as the bird breathes), and quickly give it a little twist in the windpipe, when the parasites will loose their hold and in due course be sneezed out by the birds.

This is not the only method of curing that has been suggested. Various powders are sold by different firms for sprinkling about the ground, and no doubt these are useful in their way and tend to encourage the birds to shake out the parasite, whilst at the same time discouraging the development of any more of these creatures, which

are supposed to hatch out in the soil, and by some means to be picked up by the birds and thus be transferred to the windpipe.

Some writers have advocated from time to time various methods of curing the birds, such as holding them in carbolic fumes or in the smoke of a chimney—methods which appear to be absolutely inhuman, not to say hopelessly ineffective; there is nothing at all cruel or painful in the use of a feather dipped in oil, and experience shows that if this is not effective the first time it will be after two or three attempts.

It is very important when there has once been an outbreak of this complaint, that the ground where it has occurred should be dug over and be thoroughly disinfected before the next season.

STOCK NOTES.

Better than Medicine.—No man keeping horses and cattle should be without a large syringe for use in the rectum and in the vaginas of cows and mares. In very many cases it is far more useful than any medicines that can be used, and for some troubles there is no substitute. But it cannot be left to be used by the ordinary hand or it can do harm. Its most obvious use perhaps, is in constipation, especially the constipation that accompanies fever in cattle when the first thing that should be done is to empty the bowels by means of the syringe. Then in cases of abortion in cows or mares, the cleaning out of the vagina thoroughly is an absolute necessity, using from two to four quarts of warm (not hot) water with two to five teaspoonfuls of Jeyes in it. In this particular case (abortion), Corrosive Sublimate (to be bought in pills at the chemist's) dissolved in the water, is the most effective cleanser, but again, this is a substance that requires the most careful watching and handling, as it is a powerful poison if taken internally.

We have found the syringe eminently useful too, to clean out mares which have been found hard to get in foal. If a week before service the vagina is cleansed with two to three quarts of warm water in which a pinch of permanganate of potash is dissolved, and this repeated two days after, then the day before serving a tablespoonful of Bi-carbonate of Soda or a teaspoonful of powdered borax is used in the water instead of the Permanganate of Potash, mares will in most cases hold to the service.

A good cattle and horse syringe holding a quart of water, can be had for about £1.

In stock-raising districts Branch Societies could buy one of these out of their funds and hire it out in troubles among the stock of their members for say, a fee of 3d. One lesson on its use is enough.

* * *

Worms in Pigs.—Pigs, especially those allowed to run about the houseyard (not a sanitary condition) or that are confined in pens

seldom or never cleaned out, nearly always suffer from worms,—even though the owner does not notice the symptoms, even if he knows these, or the pig may not show many of the signs that mean bad infestation. These are unthriftiness, diarrhoea, restlessness, lack of appetite, and in young pigs, twitchings and other nervous symptoms. A dose of a half to one teaspoonful Jeyes' Fluid and two to four tablespoonfuls castor oil according to the size of the animal, given after keeping the animal without food for at least six hours, and followed up by a similar dose a week later, will kill and expel the parasites.

For pigs that are difficult to handle, and for people afraid of their pigs, take three to four tablespoonfuls condensed milk dissolved in one pint hot water and add a half to a full tablespoonful turpentine and let the pig slop it up. If it does not, then increase the proportion of condensed milk to cover taste of turpentine.

For kidney worm and lung worm the Jeyes' or turpentine treatment should be given with condensed milk, and the dose repeated every second day for a week, then stopped for a week and given three times at intervals of a day the following week. But it is almost hopeless trying to cure kidney worms.

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CHARCOAL FOR PIGS.—Remember water and shade for your pigs in the hot months, and give them a plentiful supply of charcoal. No animal can thrive among its own excretions, therefore shift the hogs often or keep the pens clean and well bedded or move the pens to fresh ground.

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JERSEY CATTLE.—The finest Jerseys are still fonnd in the Island of Jersey, and every year that place is ransacked by American buyers for the most promising animals. The greatest buyer is Cooper of Coopersburg, U.S.A., who holds a great annual sale of Jersey cattle. At this year's sale 131 animals sold for a little over £18,000. One bull fetched £2,220. But the greatest bull of all, "Combination," was sick on the day of the sale, when it was expected £3,000 would have been got for him, and two days after this precious animal died of peritonitis.

"Combination" was owned by J. A. Pierce, Secretary of the Jersey Island Herd Book, and was sold by him to an American buyer for £1,000. This bull too was an exceptional colour for a Jersey, being a solid black.

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HEAVY WEIGHTS OF YOUNG STOCK.—The whole tendency in the best beef markets of the world is for young animals quickly matured. Not so many years ago animals of four to five years of age with huge mounds of flesh were favoured, but the principles of breeding and feeding have so advanced that beasts under two years old are now winning championships at Smithfield Show. Mr. C. A. T. Fursdon has written us calling attention to this and has sent us a

list showing the age and weights of the different breeds. We have been noting this tendency for years back in stock papers and have occasionally published paragraphs referring to the great weights of comparatively young animals. At the Carcass Exhibition at the Smithfield Club Show held lately, the winner was a cross between a Shorthorn and an Aberdeen-Angus, which at one year and nine months gave a live weight of thirteen hundredweight, one quarter, eleven pounds. In the sheep carcasses, the winner was a Cheviot wether, which at seven months and three weeks old, had a live weight of one hundred and two pounds and a carcass weight of sixty-four pounds. The champion of the short-wooled breeds was a Suffolk ram which, at nine months old, had a live weight of one hundred and forty-three pounds and a carcass weight of eighty-eight pounds.

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GUERNSEY COWS.—The Island of Guernsey, the home of Guernsey cows, is like its neighbouring Island of Jersey, besieged every year by buyers from the United States, eager to buy and transport to their country, promising young Guernsey bulls and cows in order to keep up the strength and constitution of the breed there. Though cows in the island are seldom fed other than on pasture and are not forced on high feeding as they are in America, they give large yields. In a milk test one cow gave twenty-six quarts a day. Another cow "Hussy of the Glen," gave from December 1908, to November 30, 1900, 14·591lbs. of milk in the twelve months, and 955lbs. of butter fat, which is equal to 1,100lbs. of butter. The highest month's milking was July, 1,372lbs., August showing 1lb. of milk less. The best butter month was October, with 104½lbs., or nearly 3½lbs. of butter daily. This is a marvellous record. The richness and quantity of the milk is attributed to the quality of the grass, due to the dampness of the climate in autumn and spring, and to the system of dressing the grass lands with wrack or seaweed, two or three times yearly, and to the watering with liquid manure twice during the winter. The seasons for this business are regulated by law. Not only do the grass lands have a seaweed dressing, but arable and bulb lands are also improved in the same way. There is no finer fertiliser for grass lands, especially uplands.

The moral of this to us is that grass is not just simply grass, that there may be a tremendous difference in its nutritive contents.

Instead, therefore, of importing so much bran, middlings and cornmeal, to feed to dairy cattle, we can feed as highly through the grass if we feed that grass with manure.

Properly packed eggs have been sent to India and Australia, and there produced a high percentage of healthy chickens.—*Farm Life.*

CASTILLOA RUBBER SEED FROM COSTA RICA.

At the last general meeting of the Society, the question of sending a man with a botanical training to Costa Rica to investigate the different varieties of Castilloa found there was discussed, and a suggestion was made that Mr. Harris might be chosen. The matter was left for the Board to settle.

Meanwhile it was discovered that the trees were seeding in July, so with the consent of the President and some members of the Board, Mr. Campbell was sent to Costa Rica to procure seed from the best yielding varieties. He returned to the Island on the 22nd July, but owing to difficulties occasioned by the late arrival of the boat at the pier and by the ship's hasty departure, the seed collected by him was taken on to New York. We have, however, received two fresh lots since and have dispatched to planters in various parts of the Island. The other seed on its arrival, was taken over by Mr. Campbell, who has planted it in his nursery, as he doubted its germinative power after so long a journey.

Mr. Campbell's report to the Board is as follows :—

I beg to submit the report of my visit to Costa Rica, at the instance of your Board. for the purpose of inspecting and comparing the Castilloa rubber trees growing there with the Castilloas growing in Jamaica, and also to obtain seeds. I left Jamaica on the 25th day of June on board the *Prinz Joachim*, and after calling at Colon and Savanilla, reached Limon, Costa Rica on the 4th of July. I went on by train the same day to Florida Farm, of which my son is the manager. When the ship reached Colon I tried to get in touch with Mr. F. W. DeValda, who has charge of a cocoa and rubber plantation at Las Cascadas in Panama, but he did not get my message in time : subsequently he went to Costa Rica and I was fortunate enough to meet him, and together we inspected several Castilloas growing on Florida Farm (including one from which my son got six and one half pounds of rubber the year before). Mr. DeValda had no difficulty in recognising them as the true Castilloa Elastica, or what he calls in the article on rubber which was published in the JOURNAL of the Jamaica Agricultural Society for June last, "Leche Gorda," the best rubber-yielding variety of the Castilloa family known to him, and I also noted that the trees there were different to the trees growing in Jamaica. To test their capacity for latex, we tapped a few of the trees very lightly. When we made a short cut in the bark with a horse-shoeing knife, the milk gushed out in streams and we were covered with the spray from it, and from the small quantity of latex that we collected a little dry rubber was obtained. All the trees on this farm appeared to be of one variety, and grew on different soils, from dark alluvial to clayey red and at elevations varying from 500 feet to 1,100 feet above the sea level.

I visited Freehold, a cocoa and banana farm, of which Mr. H. S. Carvalho is manager, and we rode over this farm along with Mr. M. F. Mullen, the general manager, and were accompanied also by a rubber tapper of twenty years' experience. We inspected several trees which grew among the cocoa and bananas, and also tapped them lightly. The tapper asserted that there were two varieties of Castilloa, and Mr. Carvalho agreed with him, and I must say that the flow of milk and its colour varied with some of the trees. The tapper said that the trees which gave less

latex produced quite as much rubber as those with a larger flow. At the same time I must say that I could not detect any difference in the general appearance of the trees. On the following day we inspected a magnificent grove of Castilloas on Monte Verde Farm—both of these splendid farms belong to Lindo Brothers, and my thanks are due to them for allowing me the privilege of visiting these farms, and I am deeply indebted to Messrs Mullen and Carvalho for the great help they rendered me in and around through the farms, and collecting seeds of Castilloa for me. This grove was planted by a Nicaraguan, who settled on a piece of land about thirty years ago, and planted these trees from time to time. I measured the girth of several, which varied from *sixty to one hundred and fifteen inches* four feet from the ground, and they had clean trunks forty to sixty feet high without a branch. I believe them to be all Castilloa Elastica. The fruiting season was nearly over consequently only a small quantity of seeds was obtained from these trees. but I got a fair quantity in other localities. In all I got enough to fill two boxes, which were carefully packed with charcoal dust, but unfortunately owing to the detention of the ship at Port Royal by the Quarantine Board, we did not get to the wharf in Kingston until nine p.m., and in the crush of landing 167 passengers with their baggage, which was piled up in one huge heap and there being no officers from the Customs to pass the passengers' effects, there was no possibility of checking one's things to see if they had been landed or not, and everything had to be left on the wharf that night. Next morning when I went to look for my belongings, I only found two out of five packages, and the two boxes of Castilloa seeds and another parcel had apparently not been landed and were carried away in the ship to New York. I exceedingly regret the loss of these seeds, and wrote to the agents of the company in New York to return these boxes by the same steamer which took them away and land them in Kingston, and if they do turn up possibly some of the seeds may still be sound. At the same time I left instructions with my son in Costa Rica to collect all the seeds that he could find and ship them to Jamaica, as I am convinced that the varieties of Castilloa in Costa Rica are far superior to any now growing in Jamaica, and I am certain that there are thousands of acres of land in Jamaica in which these Castilloas will thrive and give satisfaction.

It rained most of the time that I was in Costa Rica, but in going about inspecting Castilloas, I also inspected some banana plants that looked unhealthy, growing in low-lying localities, the sickly appearance of these was undoubtedly due to want of drainage. Again, in some places the bananas were not thriving owing to there being only a few inches of soil on the surface and below that a deep bed of sand and gravel, and the plants suffered for the want of food. Also a small burrowing animal locally called "Taltoosa," eats into the bulb, and the sucker dies. This animal is most destructive to cocoa trees, also eating away the roots and then the stem itself. I asked several managers of banana farms as to the existence of a specific disease for which they could not account. Some admitted that there was such, others again denied anything of the kind. With these conflicting views it would be folly for me to make any definite statement on the subject one way or the other, but I did see some unhealthy banana plants without my being able to find the cause. At the same time I must say that if there is a bacterial disease affecting the bananas in Costa Rica, it spreads very slowly, as experienced planters assured me that they have seen solitary roots suffering in the way I described above for the last ten or twelve years, and the usual practice is to cut the whole root down and planting another sucker alongside which grew and bore fruit without showing signs of a disease.

I met the man (a Mr. Wilson) who sold Baltimore Farm—so often referred to as having been destroyed by a banana disease—to Mr. Minor C. Keith and Mr. David Lindo, who were the owners at the time when Mr. H. Q. Levy was employed there, and he informed me that it was no dis-

ease that killed the bananas on that farm, but that the soil was very shallow, and below that coarse sand and gravel and that the bananas died for want of plant food; although Mr. Wilson admitted the existence of some disease, for which he could not account, which affected bananas in some districts in Costa Rica.—I am, gentlemen, your obedient servant,

D. CAMPBELL.

COMMENTS.

POSTAGE to this office is NOT free.

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BRANCH NOTES.—We have had repeated complaints from Secretaries that their notes have not appeared in the JOURNAL. This month there being no meeting of the Board to report, we have devoted 11 pages to the local notes.

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PRAEDIAL LARCENY BILL.—On page 334 we publish the rules governing the payment of "authorised persons" for expenses incurred in bringing the praedial thief to justice. Will Branch Secretaries please note carefully for the guidance of parties concerned.

* * *

POTATOES.—Now is the time for preparing land for potatoes for planting in the early part of November. It is folly for anyone who proposes to get profitable returns to begin his clearing and ploughing a week before he expects to sow. The soil ought to be ploughed deep and be left for the action of the atmosphere and sun, and later the October rains will pulverise it; then manure may be added and forked well in. A well-kept compost heap comes in handy here. Trench off and plant the seed; all things being equal, a bumper crop may be expected.

Please also note we import seed *to order only*. All orders must be sent here early—say before the end of this month.

* * *

POULTRY KEEPING.—We have just issued in pamphlet form the "Hints on Poultry Keeping" which appeared in the JOURNAL last year. The general handling of Poultry is treated on, including Breeds, Feeding, Diseases, etc. Copies may be obtained from this office at 2d. each, post free.

Year by year we write on the subject of introducing fresh roosters to the poultry yard, so as to avoid in-breeding, yet we find breeders are quite indifferent to their own interests and to that of the country, and adhere to the pernicious custom of running the same rooster with the hens year in and year out. That means young pullets for some years will be his own daughters or perhaps even grand-daughters. The best time to seek a fresh rooster is at the

close of the season when everyone who breeds on a proper scale is bent on the same errand, and a fair exchange is then comparatively easy. Let us know what class of rooster you have in use at present and what you require for next season and we shall try to get you a good change. *In two or three months there will be more* demand than supply.

* * *

PEAS AND BEANS.—We should grow more leguminous crops for many reasons. Animal manure can seldom be had in quantity here, but on every estate where there are canes or bananas, cowpeas can be easily grown, and they will enrich the soil if grown properly. If artificial fertilisers do not act on bananas favourably,—and most experiments have shown that they do not give sufficient return on the money expended, these artificials can be made to act beneficially indirectly through a leguminous crop; then there will be no puzzle what combination ought to be used. Fertilisers rich in potash and phosphoric acid applied before the cowpeas are planted, will produce luxuriant vines. Wood ashes make a first class fertiliser in this way. Bee keepers do not appreciate leguminous crops as honey plants the way they ought. The cowpea, for instance, yields an abundant supply of nectar, although the season of its blossom is short. We have seen it stated that unlike all other plants the stems and not the blossoms of cowpeas secrete the nectar as the young pods are formed. We know this, anyway, that bees frequent a field of cowpeas to a great extent and get nectar in abundance.

* * *

RICE.—*We regret to note that in some districts only white rice is stocked in the stores because the people will not buy the brown* rice. They have got an idea—a most erroneous one—that white rice is better. This may appear a trifle, but in reality it is a very vital matter. The use of so much white flour in place of home-grown food is bad enough, but to reject the brown rice, which contains, weight for weight, far more than double the food value of white rice, is the height of foolishness. We had articles in pages 444-45 of the November JOURNAL for 1906, showing how, in the process of milling nearly everything that is really worth eating in rice from the point of view of nutrition is taken out. We refer readers to these articles. If anyone wishes to satisfy himself or herself as to the difference in the brown rice and the white rice, let him or her bring up two different broods of chickens on either food alone or feed a dog for a week on each of these foods. For the tropics there are foods as good as brown rice but there are none better; there are plenty of poor foods but none poorer than white rice.

Who is wise? He that learns from every one.—Franklin.

BRANCH NOTES.

Portland Central (St. Margaret's Bay).—At a general meeting of this Branch held on Saturday, the 20th August, there were present:—Mr. J. M. Roper in the chair; W. Cradwick, Esq., Agricultural Instructor; and quite a number of members. After the reading and confirming of the minutes of the last meeting, the dates of Mr. Cradwick's next visits to the district were fixed as follows:—Mr. Carr's cultivation at Panton, October 12th; special meeting at Hope Bay, October 13th; general meeting at St. Margaret's Bay, October 15th; general meeting at St. Margaret's Bay, Nov. 17th. This Branch is of opinion that the holding of Shows in the Island follow each other in too quick a succession and in somewhat of a rivalling principle, thus tending to make them a bit insipid. It would suggest that the Parent Society carefully consider this matter. The members present were unanimous in the opinion that the judging at Shows should be more confined to the Agricultural Instructors, who are paid for this work and will undoubtedly use their whole time and energy in trying to give satisfaction generally. There seems to exist throughout the Island a class of what may be called "professional exhibitors," whose names seem to figure very largely at most Shows. These generally exhibit little or nothing of their own produce. Some of the bye-laws of Shows should be amended to prohibit this. Would that the Parent Society consider these matters. It has been noticed that most of the public holidays fall on rather inconvenient days, for much pleasure. Couldn't there be some amendment or reorganising of the Holiday Laws, so as to have the public holidays each year on more convenient days? This Branch had to approach the Parochial Board of the parish for the sanitary neglect of this village. Nothing has been done yet. We are hoping that before long some attention will be paid to this deserving village. Through Mr. Cradwick's suggestion the members present promised to compete in the Show to be held at Knutsford Park. Portland Central is to have a Show in 1911. We don't see why it should not be a Portland Show. Our St. Mary friends might even join in with us and have a big Show at Port Antonio, the most central part of the parish.—R. A. Henry, Secretary.

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Avocat (Portland).—The regular monthly meeting of this Branch was held in the Schoolroom on the 13th August, at four p.m. There were present: Rev. P. F. X. Mulry, President; Messrs. Joseph Smith, David Moodie, Phillip Murray, Edward Ellis, James Knight, Joseph McLarty, William McLean, Miss Elizabeth Kelly, and the Secretary. The minutes of the previous meeting were read and confirmed. After roll-call, the President addressed the meeting in a most enthusiastic manner and explained the chief cause of the delay with regard to the purchasing of the China pig which he had volunteered to obtain for the Society, but he was, however, in a position to state positively that he had got it, as the gentleman from whom he bought it promised to have it shipped to Buff Bay in care of Mr. W. Russell. Preliminary arrangements were then made in connection with the keeping of the pig by the members, as the person to whom it was to have been entrusted, contemplates removing to another

locality. Mr. Joseph Smith, however, impressed the possibility of having it put in charge of one of the members of the Society who were present. After a lengthy consultation Mr. William McLean agreed to keep it, the members being responsible for the supply of food and other particulars. The "Book of Rules" was next spoken about. The President thought that it would be better to go on with the Society as it is at present, as the Treasurer has only about 10/- in hand and the book of rules would cost more than that amount to defray expenses in having it printed. I again take this opportunity of asking those members who have not sent in their subscriptions to settle at once as it is so annoying to go dunning. Mr. Joseph McLarty asked whether or not this Branch would consider and second the resolution sent in to the Parent Society from the Central St. Mary's Branch, relative to the present system of buying bananas. The matter was cousidered and the Secretary instructed to submit the following resolution to the Secretary of the Parent Society:—Resolved: "That this Society appreciates and seconds the resolution of the St. Mary's Central Branch with regard to the purchasing of bananas by weight, and that the Parent Society be requested to approach the Government with a view to having the present system abolished *in toto*, and that by weight be adopted." A correspondence was read by the Secretary from the *Jamaica Times re* special columns which are devoted to articles on Bee-keeping. As none of the members made any definite determination to subscribe for same it was deferred. The Secretary then read a letter of resignation from the President. The members present expressed regret at having to lose his services as President and Chairman of this Branch. Warm tribute was also paid with regard to the abiding interest he has evinced in the Society since its inception to the present time. After the distribution of JOURNALS to the members the meeting adjourned till the tenth September.—J. N. PERKINS, Secretary.

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Port Royal Mountains (St. Andrew).—The annual general meeting of this Branch was held at Mount Fletcher on Saturday, August 13th. There was a large attendance of members. In the absence of the President, the Rev. C. H. Coles, who is gone on a holiday trip to England, the Rev. N. A. Baquie presided. The minutes of last meeting were read and confirmed. The election of officers for the ensuing year resulted as follows: Rev. C. H. Coles, President; Rev. N. A. Baquie and Mr. R. S. Henry, *Vice-presidents; Mr. D. H. Wallis, Treasurer; C. L. A. Rennalls, Secretary*. The Managing Committee to consist of the officers of the Society together with Messrs W. G. Thomson, R. S. Tait, Jacob Hall, James Jacob, J. S. McDermott, Chas. Davis, Thomas Jackson, James Whitworth, Robert Simons, Isaac Henry, James Willacy, E. A. Walker, and C. C. Ireland. The Secretary read a letter from the Secretary of the Knutsford Park Show inviting the co-operation of this Branch in the forthcoming Show. It was decided that this Branch should send up both individual as well as Branch exhibits, and Mr. J. A. Whitworth was appointed to assist the Secretary in the collecting and arranging of exhibits. It was decided that in view of the Knutsford Show, the local Show of this Branch should be postponed from the end of April till the first week in July. The Secretary read a letter from the Surveyor General informing the Society that it is not intended to offer New Haven lands for sale but to reserve them permanently in wood. In view of this information from the Surveyor General, the Secretary was instructed to address His Excellency the Governor on the matter, explaining the conditions that obtain in this district and the urgent need there is for arable lands, and to explain further that the land sought was the lower portion of the property, the clearing of which for cultivation would in no wise affect the rainfall. The members expressed themselves very strongly on the point, as the need of good lands is greatly felt especially since the drought of the last few years, capped by the destructive flood of last year which swept away so

much of the more fertile tracts of land in the district. Mr. Rennalls read two papers: one on "Parasites, and how they affect Agriculture," the other on "Hill-side cultivation of Bananas." Both papers were received in appreciative terms and interesting discussions took place on the subjects dealt with. A vote of thanks, moved by Rev. N. A. Baquie, was heartily accorded the writer. It was decided to have the following subject discussed at the next general quarterly meeting: "If it is impossible for a settler to have both a horse and a cow, which should he keep from a utilitarian point of view?" At next meeting Mr. Rennalls will also give demonstrations in circumposing and budding. The following new members were enrolled:—Messrs. James Sylvester, Richard Henry, Nathaniel Walters, Richard Roberts, Augustus Rodney, and Francis Morse.—C. L. A. Rennalls, Secretary.

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Nain (St. Elizabeth).—A meeting of this Branch was held in the Nain Schoolhouse on the *8th July, 1910*, commencing at 4 p.m. *Present:* Rev. C. T. Rickard, Chairman; Mr. E. J. Smith, the Travelling Instructor; Mr. H. W. Lynch, and eighteen others, males and females, also the Secretary of the Branch. The minutes of the previous meeting were read and confirmed. The Chairman announced that this Branch has been affiliated to the Parent Society, and read to the audience the letter of affiliation from the Secretary. He also reported that thirty-one persons had joined this Branch and that it was still open for more members. Five persons came forward and gave in their names and paid the usual yearly fees. The Instructor read a communication from the Chairman of the Parochial Board of St. Elizabeth, also one from the Colonial Secretary to the Chairman of the Parochial Board, respecting the "Water Loan Law" for St. Elizabeth. It was agreed that instead of sending a deputation to wait upon the Parochial Board respecting the "Water Supply Loan Law," the Instructor shonld take the opportunity of seeing the Chairman of the Parochial Board, who was expected to be at the laying of the foundation stone of the new Church at Mount Hermon on the 2nd August, and invite him to speak to the people after the ceremony was over, about the "Water Supply Loan Law." The Chairman called upon Mr. H. W. Lynch to address the meeting. Mr. Lynch in rising, said it gave him great pleasure to be present and to see such a representative gathering, and it was only a pity such a Branch Society was not started in the district long before. He thought the Water Supply Loan Law if made use of would enable the people to have their own private tanks, which would be so much better than having public tanks. Public tanks, he said, were in one way or the other responsible for the spread of diseases in a district. Mr. Lynch then read a paper on "Frugality" or "Thrift," which was highly interesting and instructive. He, in this paper, showed the need and nsefulness of a Penny Bank. He gave examples of the effect of thrift or saving, and concluded by saying he hoped the people of these parts would give the "lie" to the too frequent statement that we here are "a good-for-nothing set of people." The Chairman, in returning thanks to Mr. Lynch for his paper said, he only regretted that there was not a much larger attendance to listen to and take home information imparted in such a splendid paper as produced by Mr. Lynch, and that if he had the means he would get copies of it printed to be circulated among our people. At this meeting it was agreed to start a penny bank in connection with the Society. By way of guidance rules governing the existence of a penny bank were read and explained both by the Instructor and the Chairman. After several important questions were asked respecting the working of such a bank and satisfactorily answered by the Instructor—Trustees, Treasurer and Secretary to transact the business of a penny bank were appointed, and the Secretary of the Branch was instructed to secure by purchase one hundred penny bank pass books, an account book and a ledger, in readiness to start such a penny bank on the 19th August.

The question was raised about the amount paid in as fees by the members of the Lititz and Nain Branch which was now defunct, as no account was given as to how the balance of amount was spent after paying the affiliation fee for the year. A goodly number of the members of the Nain Branch had joined the now defunct Lititz and Nain Branch and nothing was known about the money deposited there. The Secretary was instructed to communicate with the Secretary of the Lititz and Nain Branch now out of existence, to ascertain what had become of the finance, and to say that if any money was in hand to pass it over to this new Branch, which was in effect a resuscitation Branch of the defunct one. The Chairman stated that we were now in a position to recommend the appointment of "authorised persons" for the various districts. The next meeting was fixed for the 19th August, at 11 a.m. It was moved by the Secretary and seconded by the Chairman, that Mr. Lynch's paper on 'Thrift' be re-read the next meeting day. The time having grown late the Instructor could not say anything in the line of agriculture; he said, however, that he had at Alligator Pond guinea corn, and would get it up here by the next meeting, and that seed corn would be sent to South Manchester. He would be willing to get some for these districts if required, but it must be paid for. The members said they were willing to buy seed corn. It grew very late therefore the meeting adjourned after the pronouncing of the Benediction by the Chairman.—J. W. HARRISON, Secretary.

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Troja (St. Catherine).—The regular monthly meeting of this Branch was held on the 4th of August, at its usual hour, 6.30 p.m. There were twenty-two members present, and H. L. Mossman, Esq., Agricultural Instructor, was also in attendance. The minutes of the preceeding meeting were read and confirmed. A communication from the Acting Secretary of the Jamaica Agricultural Society was read, when the Secretary of the Branch was requested to secure particulars relative to the kind of agricultural products which would be required at the Knutsford Park Show. The resignation of Mr. C. M. Anderson as Assistant Secretary, was submitted, and Mr. M. Goodison was appointed to fill his place. This appointment was the result of a motion by Mr. V. N. Magnus, seconded by Mr. H. N. Ross. The selection of "authorised persons" next came up for discussion. There was a diversity of opinion on the subject, but at length votes were taken and retaken, and the matter was handed over to be dealt with by a Select Committee, who was to report on it at the next meeting. The Committee to consist of:—Messrs. M. Magnus, V. N. Magnus, E. Lewis, and D. Crosby. The necessity of constructing foot bridges over the river which several times, crosses the road passing through Troja, was next considered. A resolution was passed by which the President and Secretary were asked to do all in their power to bring about this necessary requirement. A deviation of the road along the steep hill passing through Congroom was considered highly necessary. This hill being so steep that it is with great difficulty for animals to travel over it, even without loads. The next thing on the agenda was a lecture by Mr. Mossman. He took as his subject "seeds and seed selection." Before going into it, he spoke briefly on the different kinds of cocoa grown in Jamaica. The two kinds most commonly grown Criollo and Forastero. The Forastero yields more pods, on the whole can be more profitably grown, and should be stuck to in preference to the other types. Dealing with the planting of seeds he said that it was a very common practice to plant them at or very near to banana roots. Doing so was injurious and risky, as insects generally congregate there, and if the banana is diseased, it affects the cocoa. The address was very interesting and helpful. A few questions were asked, all of which were clearly answered. A vote of thanks, moved by Mr. A. Vivian Hagues and seconded by Mr. E. A. McNeil, was tendered to the lecturer by the President. At the suggestion of the President, Mr. Mossman agreed to do some field demonstration

whenever possible, the Secretary and himself to make the necessary arrangements beforehand. The following new members were elected:—Messrs. D. Crossby, Solomon Lee, V. N. Magnus, J. Low, U. A. Fraucis, and P. Williams. The roll was called and the meeting adjourned until the 25th August.—A. VIVIAN HAGUES, Secretary.

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Scotts Hall (St. Mary).—The regular monthly meeting of this Branch was held in the Schoolroom on Friday, 29th July, at 4 p.m. There were present:—The Rev. J. Gordon Hay, in the chair; J. Briscoe, Esq., Agricultural Instructor; the Secretary, sixteen other members and Miss M. Smith. The meetiug was opened with prayer, after which the minutes of last meeting were read and confirmed. The appointment of suitable persons to serve as "authorised persons," came up for consideration. Owing to the fact that there was not a Justice of the Peace living nearer than ten miles, and in many cases the "authorised persons" in adjoining districts, after going all this journey, found out that a case had not been made, hence all their time was wasted as the prisoner is released. This being so no one was willing to accept the post. Had there been a Justice of the Peace living nearer much time would be saved and much worries avoided. In many cases prisoners have to be locked up at the police station for fully twenty-four hours before they can be taken before a Justice of the Peace. After further discussion the Secretary moved a resolution that a petition be drafted and sent to the Custos asking him to have one or two gentlemen appointed as Justices of the Peace. This was seconded by Mr. E. E. Campbell and unanimously agreed to by all present. The Secretary was asked to prepare the petition as early as possible. The Secretary next reported on the Nashville Show. Four members competed from the Society, three of whom succeeded in winning four prizes. He (the Secretary) got first prize for garden eggs, Mr. Henry got first prize for his cow in the small settlers' class, and Mrs. Jonas got two second prizes for needlework. The President then congratulated the Society for its success at so early a stage and expressed high hopes for its future. The Instructor then gave a very instructive address, in the course of which he pointed out some very useful facts in connection with the planting and caring of banana and cocoa. A hearty vote of thanks was given the Instructor for his instructive address. Pumpkin seeds and pamphlets on the curing of cocoa were distributed to the members. The meeting then closed by the singing of the National Anthem.—G. O. HANSON, Secretary.

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Frankfield (Clarendon).—The annual meeting of this Branch was held in the Frankfield Schoolroom on the 22nd July, 1910. There were present: Rev. A. N. Thompson, one of the Vice-presidents, who presided; J. Hirst, Esq., Agricultural Instructor; ten other members and the Secretary. The minutes of the two last monthly meetings were read and confirmed *nem con*. As a matter arising out of the minutes, the President asked whether the names of the "authorised persons" *re* praedial larceny (Law 4 of 1909) had been sent to the Secretary of the Parent Society to be sent to the Acting Inspector General of Police for confirmation. The Secretary replied inthe affirmative, but said he has not yet seen or received information whether the Governor has sanctioned the appointments. In the course of his speech, the Instructor said that the annual meeting should be well advertised like a "Missionary Meeting," so that non-members could be present. He encouraged the Society to go on doing its best as it had hitherto done. There was much to be accomplished through its medium and each member was required to do his or her share. The President called upon the Secretary to read the annual report, which, after being done, a hearty vote of thanks was accorded him for his services during the past year. To this he replied returning thanks for the vote, and promising to merit another vote of thanks at the next annual meeting if

re-elected to serve again. A discussion on the proposed branch railway line up the Rio Minho Valley now came up Much dissatisfaction was evinced on the part of the members of this Society and the entire community at the postponement of the consideration of the scheme by the Government. The reason for the shelving was not seen. The Instructor said that much fighting had been done, but the opposing energy had outweighed the favourable one; and encouraged the Society to equip itself for the coming Council. The discussion led to the passing of the following resolution :—Resolved—"That this Society expresses dissatisfaction that in spite of the very favourable report presented by the large majority of the Select Committee of the Legislative Council appointed to inquire into the matter of railway extension up the Rio Minho Valley, the Government did not see its way to bring it before the Legislative Council; and in view of the importance of such extension to this locality we are determined not to allow the matter to rest until it becomes an accomplished fact." The President encouraged the members to plant bananas to meet the demand in the spring when the prices are highest. The Instructor spoke highly and emphatically on the importance of the hat-making industry which is proceeding tardily. The new makers are to be summoned to meet him at his next visit to receive advice on the matter. In the matter of subscription the members were reminded that they were to pay up now for 1910-1911. It is to be hoped that they will do so. The election of officers for the ensuing year was next proceeded with and resulted as follows :—Mr. J. S. Edwards, President; Rev. A. N. Thompson and Mr. J. E. C. McKenzie, Vice-presidents; and J. A. Beckford, Secretary. As Managing Committee, Messrs. R. S. Grant, Jas. Dyke, J. S. Spencer, G. W. Downie, and J. T. Edwards were elected. Mr. R. S. Grant said he would do his best for the up-keep of this Society, and hoped the others would do the same so that we could boast of a model Society. The Instructor said that ministers and teachers help exceedingly towards the growth of the agricultural wealth of this Island, and thanked them for it. Mr. J. T. Foster said that cultivators were discouraged to some extent by praedial thieves, and suggested that bloodhounds should be imported to help the constables to alleviate the evil. He hoped it would come to pass. An address, very meritorious, was delivered by the Instructor on the banana cultivation. He received the appreciation of the meeting which was highly interested in the lecture. The Cabbage Hill foot-track came up for discussion. The district was a large one and a bridle road was necessary. A petition was to be drafted and sent to the Parochial Board of the parish for its consideration. The meeting closed with the National Anthem to meet again on the 26th August, 1910, at noon.—J. A. BECKFORD, Secretary.

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New Market (St. Elizabeth).—This Branch held a successful meeting on Wednesday afternoon the 8th June, at the New Market Lodgings, by permission of Mr. H. A. Forde, the courteous proprietor, the Chairman, Mr. J. A. S. Monaghan, presiding. The heavy rains which fell during the day prevented many of the members attending, however, we managed to get up a quorum by the presence of Messrs. J. T. Palache, G. E. Daley, Chas. O'Connor, J. S. Smith, H. A. Forde, Rev. G. Maxwell, and the Secretary. Several matters connected with the next Show to be held on the 8th December, were discussed, among which was the Show site. Hitherto the New Market Agricultural Shows were by the courtesy of the proprietor of Paynes Town, held on that property, but Mr. G. E. Daley has expressed his regret that having made changes in its local position, his commons were not now suitable. Mr. G. H. Reid has kindly consented to allow the Show to be held on his property New Savannah, the commons of which are favourably situated for a Show ground. With the concerted action of the members of the Branch and with the assistance of willing workers, the coming Show promises "to go on better" than its predecessors.

Springfield (St. James).—This Branch held its regular quarterly meeting at Kensington Schoolroom on the 29th July. Present:—Rev. J. A. Jones President, in the chair; J. Jacob Irving, Esq., Vice-president and Treasurer; D. Drummond, Secretary; Messrs. A. J. McLaughlin, B. B. Morris, A. Stevens, J. Shaw, S. Leach, S. Brown, and R. Taylor, visitor. The President expressed his disappointment at not having the Travelling Instructor or Mr. S. A. Schleifer at the meeting as was expected, but encouraged the members to try and make the meeting a profitable one. The minutes of the last meeting were read and confirmed. Communications from various sources were read and discussed. One member wrote sending in his resignation but the Secretary was instructed to write informing him to reconsider and withdraw it. The President asked the members to attend the meetings regularly and to read the JOURNALS carefully, as they dealt not only of agriculture but impart useful hints about other things, as how to attend to cows, horses, poultry, bees, etc. Mr. McLauglin spoke of his high appreciation of the lecture given by Mr. H. Q. Levy and outlined the different ways he profited by the lecture and things he never knew before were made so easy to understand, and he classed it as among one of the most instructive lectures given at the Springfield Branch, and urged the friends to constant and regular attendance. This was agreed to. The Secretary called attention to other districts which are quite near, by trying to establish new Agricultural Societies, and pointed out the utter needlessness. The President then promised to oppose the formation of any such societies, and to fight strenuously against them as the Springfield Branch is the centre. The President moved, seconded by the Treasurer and carried, that the thanks of the Society be tendered to the Secretary for the very able manner in which he copied down the minutes of the last meeting. The Treasurer, J. Jacob Irving, Esq., in a very able and forcible address, pointed out the value of the Agricultural Society, and that members should take great interest in it, showing that once the sugar cane and yams were foremost or prominent, but now bananas are supreme and in the foremost van of agricultural advancement in the Colony, thus showing that agriculture must be kept up and studied highly for the proprietors are buying up the best lands and driving the small cultivators up to the hills, so they will not be able to find all the required virtues as in the rich alluvial lowlands, therefore we must study scientifically all the agricultural problems. Another important point brought out in his address was, "How are we to interest the young men of to-day to attend the lectures so that they may take an interest in gaining up-to-date knowledge so as to overthrow the primitive methods of their forefathers?" The President concurred with the speaker on his views and showed how he has spoken to the young men to interest them; showing that new problems must be solved and the young men must be reached at. Mr. McLaughlin's motion on the Praedial Larceny Law—that as other Branch Societies have selected "authorised persons," the Springfield Branch should not be behind the others in not doing so. He also spoke of the selling of bananas by weight. The president begged to move that the Treasurer and Secretary and a few others be appointed to nominate a few persons who are qualified for the Governor's approval. Regarding the selling of bananas by weight, the President begged to defer that subject till another meeting. This was seconded by Mr. S. Leach and agreed to. The Secretary called the members' notice to the affiliation fee as printed in the recent JOURNALS. Mr. Schleifer had written to the Secretary asking if he could convene an August meeting as he would like to attend, but the President instructed the Secretary to write asking the Travelling Instructor, H. Q. Levy, Esq., if he could really make it possible to be present with us in August—if not then Mr. Schleifer. The Secretary was asked to communicate with Mr. Levy asking him to send a copy of his itinerary. This was agreed to. All felt pleased that a very enjoyable meeting was held and the time well spent. The Secretary was

instructed to write to the teachers around inviting them to attend as it bears much on the agricultural teaching in the schools.—D. DRUMMOND, Secretary.

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Lamb's River (Westmoreland).—The usual quarterly meeting of this Branch was held in the Mount Hermon Schoolroom on Friday, 8th July. Present: forty-six members and twelve visitors. The minutes of the previous meeting were read and confirmed. The President read a letter from Mr. Barclay *re* the goat, by which the meeting was informed that the Society will not get him again. The Society express regret that such is the case, but hope Mr. Barclay will do all he can to procure another, against his return to Jamaica. Reference was made to arrowroot, and the Secretary informed the meeting that there is none to be had in this neighbourhood at present. He had an order from Mr. Barclay in May, for twenty barrels, but he was only able to procure eight. The Secretary read a letter *re* "Railway Freight." It was thought that in a former letter on the same subject, the matter was put too general for discussion, and so the Secretary was directed to write to the Secretary of the Parent Society asking for particulars *re* "Railway policy as regards freight," such information to be had at next meeting of the Society. The Treasurer's report was given, showing money to the credit of the Society of £5 9s. 5d. The same was adopted. At this stage of the meeting the President introduced Mr. S. A. Schleifer, the new Agricultural Travelling Instructor for the western parishes, to the meeting. Mr. Schleifer expressed his pleasure in being at the meeting, and being associated with the Branch in the capacity of Agricultural Instructor. He feels that he is among his own people, and hopes that everything will work well in the interest of agriculture. The Secretary read a letter from the St. George's Branch *re* the Show to be held at Woodstock, on the 1st August. It was decided that owing to the distance, it is not practicable for this Branch to take part in the Show. Another letter was read from the New Market Branch *re* Show to be held at New Savannah on the 8th December, and soliciting co-operation. The Secretary was directed to reply to the same promising support. Definite arrangements will be made when the prize list is received. Booklets from the German Kali Works (Cuba), Department of Agriculture, and Society for the Protection of Animals, were laid on the table for distribution after the meeting. The Secretary gave notice that he intends to move a resolution at next meeting *re* the amendment of Rule 7 of the Society: "The time of meeting of the Society." Owing to the increase of membership of the Society, it is decided to relieve the Secretary of a part of the work by getting circular letters printed, so that he will only have to fill in dates of meetings. It was decided that 15/- be spent in the purchase of vegetable seeds; 10/- in cabbages, and 5/- in turnips, tomatoes and cucumbers. The Secretary to procure these for distribution at the October meeting of the Society. The President introduced Miss Latibeaudiere to the meeting as instructress of the jippi-jappa hat class at Seaford Town. She expressed her pleasure in being present at the meeting, and also in teaching the girls hat-making. The chief thing to aim at is to make good hats, and they will always be sold. Mr. Geo. Gardner proposed that something be done by this Branch to improve the condition of the road leading into "Coffee Grounds." After discussion the following Committee consisting of Messrs. Gardner, Schleifer, Brown, Germaine, and Graves, was appointed to inspect the road, and report at next meeting, when a petition will be sent through the Branch to the Parochial Board on behalf of the said road. The following resolutions were passed:—Resolved: "That in the opinion of the Lamb's River Branch Society, a few chains of the road leading from Lamb's River into Seaford Town, at a point known as Riman Hill, is a menace to the public safety; the ridging up of the road with a water-table on the lower side, produces a tendency to run over the precipice at the steepest part and just where there is a bend in the road; and that in

our opinion such a water table is the primary cause of the slipping of the road from time to time, the water shelling away the loose stones. That the Director of Public Works be respectfully asked to take steps to remedy this grievance.'' Mr. Heale gave a very instructive lecture on the following diseases amongst horsekind and their treatments, viz. :—Colic, Influenza, farcy, glanders, and fistula. A vote of thanks was accorded to him by the President for the lecture. Carried unanimously. Mr. Aug. Somers promised to give further hints on other diseases at next meeting of the Society. A discussion followed on the treatment of "bots" among horsekind, in which Messrs. Warburton, Chambers, and the Secretary took part. It was moved by Mr. Excell that another Branch Society be started in the Retrieve district, which might be an off-shoot of the Lamb's River Branch. The following were proposed and duly elected as new members of the Society:—Rev. Father McDermott, Montego Bay P.O. Mr. J. H. Duff, Bethel Town P.O., Messrs. Wm. Cunningham, J. A. Hylton, Daniel Cunningham, Lamb's River P.O. Meeting adjourned till Friday, 14th October.—U. L. Brown, Secretary.

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Spanish Town (St. Catherine).—The monthly meeting of this Branch was held on Monday, the 17th July, at Mr. William Gentle's house, the Schoolhouse not being available as it is undergoing repairs. I regret to say that there was not the usual turn out of members. The Rev. W. Clarke McCalla, President, being absent, Mr. Gentle was called to the chair. The minutes of the last meeting were read and confirmed. Letters and prize lists from the Nashville and Woodstock Branches were presented asking for the co-operation of this Society. The Secretary was instructed to acknowledge the receipt of these with thanks. Letter from the Secretary of the Jamaica Agricultural Society *re* the appointment of Mr. H. L. Mossman as Instructor for the parish was read. The meeting directed that Mr. Mossman be written stating to him the wellwishes of the Branch as also to extend to him an invitation to its future meetings. Several clippings from the last report of the Parent Society were next considered. This Society decided that the Jamaica Agricultural Society had taken up a very important position *re* the Railway and ventured to hope that through its instrumentality some reduction would be effected on the present charges, particularly on citrus fruits, bananas, provisions and fowls, the latter being entirely too high. Several notes were read from the Journal for July, which ended in the decision to debate one of the subjects. The Secretary to inform the members at an early date of such subject. As many of the members had other engagements, the meeting was brought to a close.—G. Percy Fonseca, Secretary.

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Bull Head (Upper Clarendon).—This Branch met at Mount Carmel on Thursday, 21st July. There were present: the Rev. A. A. Barclay, President, and others. Mr. J. N. Simpson being absent, Mr. T. S. Robinson was appointed Secretary *pro tem.* The President informed the Society of the proposal for a joint Agricultural Show for Upper Clarendon. All the Societies would unite to have one large central Show. The information was welcomed by the members of this Branch, who pledged themselves to give the idea their support. It was pointed out that the continual discussion about Railway extension in Upper Clarendon, has led the small settlers to develop banana cultivation. Now that the crop is coming in, they are finding it difficult to market the produce on account of the distance from Railway and seaboard. Many complain of loss already sustained in this direction The planters with one voice said, if no better transport facility is offered, then they will be compelled to give up the greater part of their fields. The President, a member of the Parochial Board, was asked to do his best to help in securing better means of communication. The following resolutions were put to the meeting and unanimously carried:—(1) Moved by Mr. T. S. Robinson, seconded by Mr.

A. Nelson—"That the members of this Branch Society express their dissatisfaction and disappointment that the matter of the Branch Railway has been again deferred. We respectfully beg to remind His Excellency that to us, small settlers in Upper Clarendon, this is a matter of paramount importance. We know that His Excellency is keenly interested in the development of these parts and is firmly convinced of the necessity and ultimate success of the venture. We therefore hasten to assure him that we are still depending on him to carry out this project to a successful issue in the next session of the Legislative Council." (2) Moved by Mr. Thos. Robotham, seconded by Mr. A. Rochester—"That in view of the fact that improved transport facility in the form of a Branch Railway and better roads, is essentially necessary for the further development of Upper Clarendon, we, the members of this Branch, pledge to support for the Legislative Council, only candidates who are ardent supporters of the Governor's message to the last Council on this subject, and strenuously to oppose all other candidates.—T. S. ROBINSON, Acting Secretary.

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Ulster Spring (Trelawny).—The July meeting of this Branch came off on the 20th. Present: The President, Rev. E. G. Douglas, Messrs. L. F. Forbes, and J. E. Neita, Vice-presidents, nineteen other members including Mrs. Houstan, Mrs. Fisher, Mrs. Gregg, Miss A. Moses, Miss M. Runcie, Miss A. Taylor, Miss E. Neita, and the Secretary. There were also a few visitors. The minutes of the last meeting were read and confirmed. As arising out of the minutes, Mr. Neita said he observed with pleasure that the Branch Societies of St. Mary were discussing the subject of selling bananas by weight. He hoped the time was not far distant when the present iniquitous system will be a thing of the past. All the members present except two were of opinion that selling by weight would go a far way towards lessening the cutting of thin fruit, which nearly ruined the trade at Rio Bueno this year. Mr. Forbes, however, pointed out that the cutting of thin fruit was due, not to the ignorance of the growers, but to their anxiety to sell as much as they can before the season is over and that this restlessness would still remain were the weight system introduced, as it was clear the same price per 100 pounds would not be given all the year round. Mr. E. A. Taylor, who expressed his doubts about the weight system at the last meeting, hailed with delight Mr. Forbes' support. All agreed, though, that the weight system would be the more equitable. Read letter from Mr. Barclay *re* the Ulster Spring Show, 1911. After discussion it was decided to leave the fixing of the exact date to the Managing Committee. *Re* Show ground Mr. Neita reported that two refreshment booths and the band stand have been demolished by firewood seekers and that the main building was in danger of suffering the same fate. It was decided to put up a notice that trespassers would be prosecuted—the President's idea to name a Vigilance Committee to catch the thieves not being supported. A discussion regarding the best method of making dry sugar was started by Mr. Josiah Currie and warmly taken up by Messrs. Ezekiel Smith and John Walcott. The speakers deplored the fact that there was no substantial demand for this article. It was decided that Mr. L. Campbell, an authorised person, be recommended to be given two days' pay in connection with the arrest and trial of James Stirling *alias* "Torey." Torey was acquitted but the Judge's remarks to the effect that the suspected person must have been seen carrying the articlesand that these cannot be taken from his place of abode, do not seem to be borne out by Section 1 of Law 4 of 1909, which states in part: "Whenever any person, hereinafter called a suspected person, has been or is in possession of any of the articles of agricultural produce, etc." A healthy discussion ensued as to why ground cocoes rot. Mr. South said it was due to too deep planting. Various other theories were proposed, some wise, others otherwise. The opinion of other Branches is invited. Under incidental matters, several members want to know what is being

done with the free grant to agriculture, as even the bulletins that could be had free for a number of years, must now be paid for at the rate of 6d. per copy. Cart owners and growers were asked not to leave their banana trash at Rio Bueno to enrich the fields of others more wideawake than themselves. The meeting adjourned.—G. W. MILLER, Secretary.

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Southfield (**St. Elizabeth**).—The regular monthly meeting of this Branch was held in Top Hill Schoolroom on Thursday, July 21st 1910. In the absence of the President and Vice-president, Mr. C. A. Harriott presided. The meeting was informed that the Governor had sanctioned the St. Elizabeth Water Supply Loan Law in its amended form. The Chairman of the Parochial Board suggested, and the meeting agreed, that the Parochial Board would give any information required respecting the working of the said law on the receipt of letters bearing such inquiries. Mr H. W. Lynch read a most valuable paper on "Thrift." He quoted freely from poets to substantiate the facts he mentioned. He gave very practical and useful hints that must have been very beneficial to all present. He was warmly complimented by the Instructor, E. J. Smith, Esq., for his very interesting paper. The penny bank system was fully discussed and a start is to be made on Saturday, August 13th, 1910. which day to be a red letter day. Messrs. E. J. Smith and J. J. Miller were appointed to draft rules for the working of the penny bank. The Secretary gave a short address on the preparation of the soil for a garden in a drought-stricken area. The rules for the working of the Society were read and adopted. The appointment of authorised persons under the new Praedial Larceny Law, was deferred for the next meeting. At the next meeting two new Vice-presidents and an Assistant Secretary are to be elected. It was agreed to open and close all meetings of the Society with prayer. Four new members were enrolled. Miss Black, assistant teacher, and the Misses D'Costa and Western, third-year candidates, rendered two most appropriate solos in fine style. These solos were much appreciated as they came as a break in the regular routine.—J. J. MILLER, Secretary.

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Pedro, (**St. Ann**).—A meeting of the Pedro Branch Agricultural and Improvement Society was held in the Waltham Chapel on Thursday night, 23rd July. There was a good attendance of members and visitors. Mr. E. Arnett, the Agricultural Instructor for the district, was also present. Mr. E. Croskill presided, and after the usual preliminaries were gone through, Mr. Arnett was called upon to address the meeting. After giving an account of his travels and expressing his pleasure at being able to be present at the meeting, Mr. Arnett went on to speak on the good work that was being done by Agricultural Societies throughout the Island and encouraged his audience to cultivate on improved methods. Many people he said, were not in favour of these Agricultural Societies, but if they would attend the meetings, read the JOURNALS, and put in practice what they hear and read, they would say otherwise. He also spoke of co-operation and urged the members to stick to their Society. He was pleased to see the interest the lady members had taken in the Society, and hoped that during this year the membership would be doubled. The lecturer spoke for nearly two hours and kept up the attention of his hearers admirably. He was heartily thanked. It was unanimously agreed that a purely local Show in connection with the Society be held early in January next. A Show Committee consisting of the officers and several other ladies and gentlemen was formed to arrange matters. It was brought to the notice of the Society that several of the tenants on the crown lands in the Pedro district were not being fairly treated with regard to their rent. It was thought best to make inquiries before dealing with the matter. The matter was put in the hands of the Secretary. After dealing with minor matters the meeting adjourned.—W. J. FRANCIS, Secretary.